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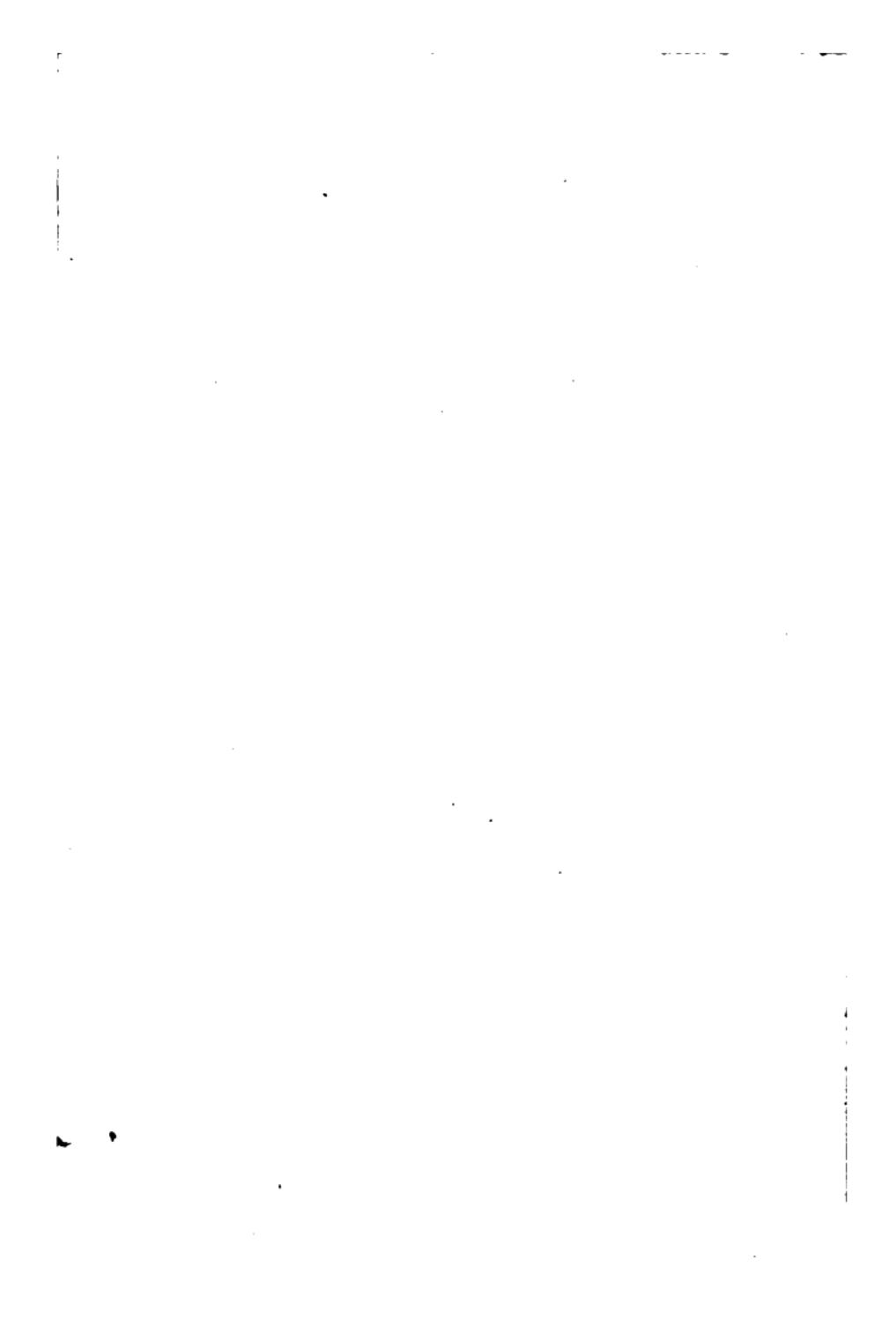
HAND-BOOK
OF
ERRORS
IN
COMMERCIAL ACCOUNTS.

Price One Shilling.

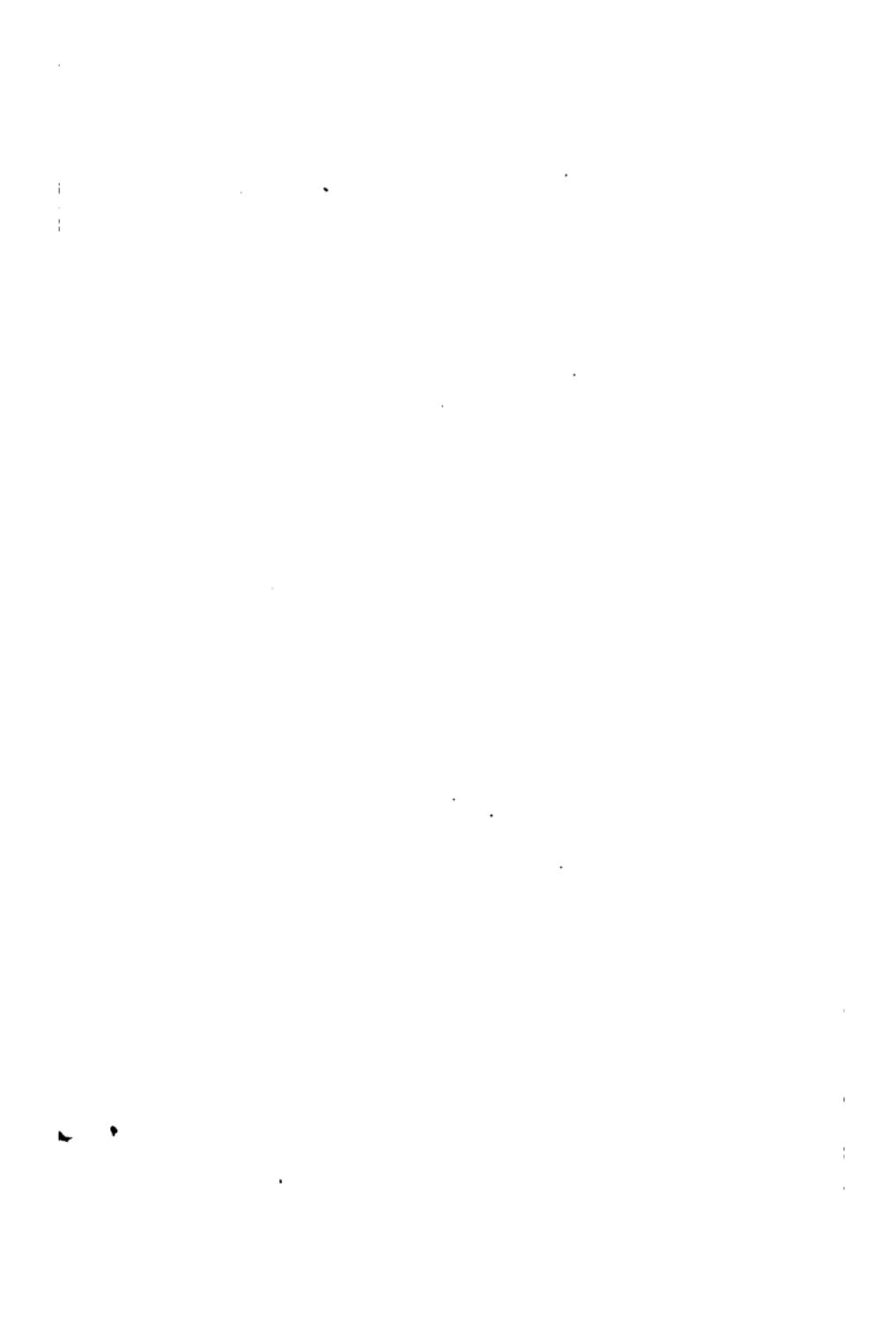
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THE
HAND-BOOK OF ERRORS
IN
COMMERCIAL ACCOUNTS:
BEING
TABLES AND RULES

BY WHICH ALL ERRORS ARISING FROM REVERSIONS, TRANS-
POSITIONS, ETC., CAN BE READILY FOUND.

COMPILED BY

R. LEGG,

OF THE LONDON JOINT STOCK BANK,
Author of "Interest Tables from One to Eight per Cent., with the
intermediate Fractional Rates of Halves, Quarters, and Eighths."

LONDON:
LONGMAN AND CO., PATERNOSTER ROW.

1858.

Price One Shilling, cloth.

181. C. 141.

LONDON:
KNIGHT AND SON, PRINTERS, CLERKENWELL CLOSE



P R E F A C E.

ALTHOUGH this work is designed more especially for the use of Bankers' clerks, it is perhaps as well to address a few words to the public generally upon the reasons why a book is produced that in its design has no other object than that of assisting in the discovery of errors in commercial accounts, and which at first sight may appear to them a fallacious attempt.

When, in book-keeping, a difference in figures exists, there can be no question as to the necessity of speedily setting it right; if, then, this book points out a class of errors that are more difficult to discover than any others, it so far renders assistance as to put

the seeker on the right track, and therefore facilitates the operation, and shortens labour.

Many errors arise from the careless manner in which figures are placed when not regulated by ruled columns, particularly in amounts expressed by figures in cheques. These errors occur by placing the figures in irregular order; as, for example, in the amount £214:7. If between the figures 1 and 4 there is a greater space left than is necessary, they would probably be copied as £21:4:7, thereby causing an error of £193:2:5; and as the first process (usually) in seeking for a difference is to look through the work for the actual amount that differs the error would not be discovered, the next step would probably be to compare all sums having 5 pence in them; this also would prove fruitless. It would then be necessary to compare every amount having pence in it, which would eventually turn the error up; but if it can be determined at once that the

error in question, £193:2:5, arises from the misplacement of certain figures, and by a very simple operation the exact figures producing the error can be arrived at, it is obvious that a great saving of time and labour must be the result; also if it can be decided positively that a difference *cannot* be caused by an error of this class, it affords an assurance that it arises from more than one error, and therefore admits a more correct judgment as to the course to be pursued.

Much of the work in Banking houses has to be done with rapidity; hence in copying down the amount of a cheque, the clerk will glance at the sum in figures, when, if they are irregularly placed, it is not improbable but that, though he may enter the right figures, he will enter the wrong amount, as shown in the preceding example. But, unfortunately for Bankers' clerks, this is not the only way in which the public unwittingly give them an enormous amount of unnecessary

labour. Some people have a peculiar habit of flourishing the ends of their figures, so that when they have made a 3 it much more resembles an 8; and again, they often make the figure 4 to appear as 11, and 11 as 4. Besides this, in carelessly “crossing” a cheque, they will perhaps join the stroke of the “crossing” to a figure 1, so that 11*d.* may look as 1*d.*, or a cipher as 6: and indeed in many other ways errors are caused, which, with ordinary care in writing, might be avoided.

It may be argued that if the amount is written legibly in the *body* of the cheque, there is no necessity for copying from the figures at all; but, though the *cashier* reads the body, it must be borne in mind that every cheque has to pass through several books, and when a “crossed” cheque, through the books of two bankers, so that such cheque may probably be copied by a dozen clerks; and if in one instance the

figures are misplaced, considerable difficulty may arise. Surely in such important transactions as the exchange of money it would be much better that the *risk* of serious errors should not be thrown on Bankers, or their clerks, by those who draw cheques making their figures illegible, or by placing them in such positions as to render the liability of their being misread.

But this book is intended to point out another class of misplaced figures, which belong peculiarly to clerks themselves ; these are *transpositions*, or putting the unit in the place of the tens or hundreds, etc., and *vice versa*. These errors arise in carrying the figures by memory from one page to another, or from one book to another, and frequently cause considerable labour before they are detected. In some cases of this kind, there being a variety of amounts causing the same error, the principal guide to the clerk will be, not to look for the actual sum he differs, but

for the most probable of those mentioned in the table.

Having thus, I trust, given sufficient reasons for bringing this book before the public, I only hope it may induce those who see it, who are in the habit of writing their cheques in an indifferent manner, to alter their practice, so that it may really at last prove useless. In the meantime, if my fellow-clerks have their labours reduced by my efforts, it will be some gratification to me that this book of *Errors* has not been published in vain; while to those who have an aptitude for figures, the result of my calculations may possess some interest, as showing how a few rules may be brought to bear on every possible error that can arise from the misplacement of figures.

EXPLANATION.

In consulting a work of this kind, professing to assist in the discovery of Errors in Figures, it must be borne in mind that no calculations or tables can unravel a complication of mistakes; but when all those portions of the work which are readily checked have been gone through, such as additions, deductions, etc., and the actual amount of the difference has been sought for, then the following Tables will probably determine what figures have caused the error. They are divided into three classes:—

1st. Reversions, or figures advanced from left to right.

2nd. Transpositions, or figures changed from right to left, and *vice versa*.

3rd. Bad or doubtful figures wrongly entered.

Of these classes there are no less than sixteen thousand amounts that are produced by errors of this kind in sums under £1000.

In the Tables will be found every possible error that can occur, either by Reversions or Transpositions, of sums below £100; so that, within that range a reference for the amount of a difference will determine at once if it arises from either of these causes, and for errors above £100, the Rule following the Tables will answer for all sums to any amount.

Against every amount in the Tables is placed a letter, which is meant to indicate the Rule to which such an amount belongs, so that it is necessary to determine, first, whether the error is a reversion or not, and then to work for the figures according to the Rule corresponding with the letter found in the Tables.

Transpositions are distinguished by the letter T against them.

Errors arising from

Σ	<i>s.</i>	<i>d.</i>									
2	A		1	7	3	B	4	1	6	A	
11	T		8	2	A		2	5	A	15	9
1	10	T	9	1	A		3	4	A	16	8
2	9	T	18	-	T		4	3	A	17	7
3	8	T	18	11	A		5	2	A	18	6
4	7	T	19	10	B		6	1	A	19	5
5	6	T	2	-	9	A		15	-	T	7
6	5	T		1	8	A		15	11	A	1
7	4	T	2	7	A		16	10	A	2	2
8	3	T	3	6	A		17	9	A	3	1
9	-	A	4	5	A		18	8	A	12	-
9	2	T	5	4	A		19	7	B	13	10
9	11	A	6	3	A	5	-	6	A	14	9
10	-	D	7	2	A		1	5	A	15	8
10	1	A	8	1	A		2	4	A	16	7
10	10	C	17	-	T		3	3	A	17	6
11	9	A	17	11	A		4	2	A	18	5
12	8	A	18	10	A		5	1	A	19	4
13	7	A	19	9	B		14	-	T	8	3
14	6	A	3	-	8	A	14	11	A	1	2
15	5	A	1	7	A		15	10	A	2	1
16	4	A	2	6	A		16	9	A	11	-
17	3	A	3	5	A		17	8	A	11	11
19	-	T	4	4	A		18	7	A	12	10
19	2	A	5	3	A		19	6	B	13	9
19	11	B	6	2	A	6	-	5	A	14	8
1	-	10	B	7	1	A	1	4	A	15	7
1	9	B	16	-	T		2	3	A	16	6
2	8	B	16	11	A		3	2	A	17	5
3	7	B	17	10	A		4	1	A	18	4
4	6	B	18	9	A		13	-	T	19	3
5	5	B	19	8	B		13	11	A	9	-
6	4	B	4	-	7	A	14	10	A	2	A

\mathfrak{L}	<i>s.</i>	<i>d.</i>									
9	1	1 _A	10	16	4 _C	12	1	7 _A	13	7	10 _A
10	-{ _D	T		17	3 _C		2	6 _A		8	9 _A
10	11 _A		18	- _A		3	5 _A		9	8 _A	
11	10 _A		18	2 _C		4	4 _A		10	7 _A	
12	9 _A		18	11 _B		5	3 _A		11	6 _A	
13	8 _A		19	1 _B		6	2 _A		12	5 _A	
14	7 _A		19	10 _A		7	-T		13	4 _A	
15	6 _A	11	-	9 _A		7	1 _A		14	3 _A	
16	5 _A		1	8 _A		7	11 _A		15	- _A	
17	4 _A		2	7 _A		8	10 _A		15	2 _A	
18	3 _A		3	6 _A		9	9 _A		15	11 _A	
19	-B		4	5 _A		10	8 _A		16	1 _A	
19	2 _B		5	4 _A		11	7 _A		16	10 _A	
19	11 _A		6	3 _A		12	6 _A		17	9 _A	
10	-	1 _A	7	2 _A		13	5 _A	14	18	8 _B	
	10 _A		8	-T		14	4 _A		19	7 _A	
1	9 _A		8	1 _A		15	3 _A		-	6 _A	
2	8 _A		8	11 _A		16	- _A		1	5 _A	
3	7 _A		9	10 _A		16	2 _A		2	4 _A	
4	6 _A		10	9 _A		16	11 _A		3	3 _A	
5	5 _A		11	8 _A		17	1 _A		4	2 _A	
6	4 _A		12	7 _A		17	10 _A		5	-T	
7	3 _A		13	6 _A		18	9 _B		5	1 _A	
8	2 _A		14	5 _A		19	8 _A		5	11 _A	
9	-T		15	4 _A	13	-	7 _A		6	10 _A	
9	1 _A		16	3 _A		1	6 _A		7	9 _A	
9	11 _C		17	- _A		2	5 _A		8	8 _A	
10	10 _C		17	2 _A		3	4 _A		9	7 _A	
11	9 _C		17	11 _A		4	3 _A		10	6 _A	
12	8 _C		18	1 _A		5	2 _A		11	5 _A	
13	7 _C		18	10 _B		6	-T		12	4 _A	
14	6 _C		19	9 _A		6	1 _A		13	3 _A	
15	5 _C	12	-	8 _A		6	11 _A		14	- _A	

L	s.	d.		L	s.	d.		L	s.	d.		L	s.	d.	
14	14	2	A	16	-	4	A	17	6	7	A	18	6	6	A
	14	11	A		1	3	A		7	6	A		7	4	A
15	1	A		2	2	A		8	5	A		7	5	A	
15	10	A		3	-	T		9	4	A		8	3	A	
16	9	A		3	1	A		10	3	A		8	4	A	
17	8	A		3	11	A		11	-	A		9	2	A	
18	7	B		4	10	A		11	2	A		9	3	A	
19	6	A		5	9	A		11	11	A		10	-	D	
15	-	5	A	6	8	A		12	1	A		10	1	A	
1	4	A		7	7	A		12	10	A		10	2	A	
2	3	A		8	6	A		13	9	A		11	1	A	
3	2	A		9	5	A		14	8	A		18	3	B	
4	-	T		10	4	A		15	7	A		19	-	B	
4	1	A		11	3	A		16	6	A		19	11	B	
4	11	A		12	-	A		17	5	A	19	-	10	B	
5	10	A		12	2	A		18	4	B		1	9	B	
6	9	A		12	11	A		19	3	A		2	8	B	
7	8	A		13	1	A	18	-	-	T		3	7	B	
8	7	A		13	10	A			2	A		4	6	B	
9	6	A		14	9	A			11	A		5	5	B	
10	5	A		15	8	A		1	-	A		6	4	B	
11	4	A		16	7	A		1	1	A		7	3	B	
12	3	A		17	6	A		1	10	A		8	2	A	
13	-	A		18	5	B		1	11	A		9	1	A	
13	2	A		19	4	A		2	9	A		18	-	B	
13	11	A	17	-	3	A		2	10	A		18	11	A	
14	1	A		1	2	A		3	8	A		19	10	A	
14	10	A		2	-	T		3	9	A	20	-	9	A	
15	9	A		2	1	A		4	7	A		1	8	A	
16	8	A		2	11	A		4	8	A		2	7	A	
17	7	A		3	10	A		5	6	A		3	6	A	
18	6	B		4	9	A		5	7	A		4	5	A	
19	5	A		5	8	A		6	5	A		5	4	A	

<i>£</i>	<i>s.</i>	<i>d.</i>									
20	6	3 A	23	-	6 A	25	14	9 A	27	10	1 A
	7	2 A		1	5 A		15	8 A		17	4 B
	8	1 A		2	4 A		16	7 A		19	- B
	17	- A		3	3 A		17	6 B		19	11 B
	17	11 B		4	2 A		18	5 A	28	-	10 B
	18	10 A		5	1 A		19	4 A		1	9 B
	19	9 A		14	- A	26	-	3 A		2	8 B
21	-	8 A		14	11 A		1	2 A		3	7 B
	1	7 A		15	10 A		2	1 A		4	6 B
	2	6 A		16	9 A		11	- A		5	5 B
	3	5 A		17	8 B		11	11 A		6	4 B
	4	4 A		18	7 A		12	10 A		7	3 B
	5	3 A		19	6 A		13	9 A		8	2 A
	6	2 A	24	-	5 A		14	8 A		9	1 A
	7	1 A		1	4 A		15	7 A		17	3 B
	16	0 A		2	3 A		16	6 A		18	- A
	16	11 A		3	2 A		17	5 B		18	11 A
	17	10 B		4	1 A		18	4 A		19	10 A
	18	9 A		13	- A		19	3 A	29	-	9 A
	19	8 A		13	11 A	27	-	- T		1	8 A
22	-	7 A		14	10 A			2 A		2	7 A
	1	6 A		15	9 A			11 A		3	6 A
	2	5 A		16	8 A			1 A		4	5 A
	3	4 A		17	7 B			10 A		5	4 A
	4	3 A		18	6 A			9 A		6	3 A
	5	2 A		19	5 A			8 A		7	2 A
	6	1 A	25	-	4 A			7 A		8	1 A
	15	- A		1	3 A			6 A		17	- B
	15	11 A		2	2 A			5 A		17	11 A
	16	10 A		3	1 A			4 A		18	10 A
	17	9 B		12	- A			3 A		19	9 A
	18	8 A		12	11 A			2 A	30	-	8 A
	19	7 A		13	10 A			- D		1	7 A

£	s.	d.	£	s.	d.	£	s.	d.	3£	s.	d.
30	2	6	32	16	9	35	11	-	7	5	5
	3	5		17	8		11	11		6	4
	4	4		18	7		12	10		7	3
	5	3		19	6		13	9	33	8	2
	6	2	33	-	5		14	8		9	1
	7	1		1	4		15	7		16	4
	16	-		2	3		16	6		18	-
	16	11	B	3	2		17	5		18	11
	17	10	A	4	1		18	4		19	10
	18	9	A	13	-		19	3	8	-	9
	19	8	A	13	11	36	-	-		1	8
31	-	7	A	14	10	A		2		2	7
	1	6	A	15	9	A		11		3	6
	2	5	A	16	8	B		1		4	5
	3	4	A	17	7	A		1	10	5	4
	4	3	A	18	6	A		2	9	6	3
	5	2	A	19	5	A		3	8	7	2
	6	1	A	34	-	4		4	7	8	1
	15	-	A	1	3	A		5	6	16	3
	15	11	A	2	2	A		6	5	17	-
	16	10	B	3	1	A		7	4	17	11
	17	9	A	12	-	A		8	3	18	10
	18	8	A	12	11	A		9	2	19	9
	19	7	A	13	10	A		10	-	9	-
32	-	6	A	14	9	A		10	1	1	7
	1	5	A	15	8	A		16	5	2	6
	2	4	A	16	7	B		19	-	3	5
	3	3	A	17	6	A		19	11	4	4
	4	2	A	18	5	A	37	-	10	5	3
	5	1	A	19	4	A		1	9	6	2
	14	-	A	35	-	3		2	8	7	1
	14	11	A		1	2		3	7	16	-
	15	10	A		2	1		4	6	16	11

£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
39	17	10	A	42	4	1	A	44	18	4	A
	18	9	A		13	-	A	19	3	A	47
	19	8	A		13	11	A	45	-	-	T
40	-	7	A		14	10	A		2	A	2
	1	6	A		15	9	B		11	A	3
	2	5	A		16	8	A		1	A	4
	3	4	A		17	7	A		1	10	5
	4	3	A		18	6	A		2	9	6
	5	2	A		19	5	A		3	8	7
	6	1	A	43	-	4	A		4	7	2
	15	-	A		1	3	A		5	6	8
	15	11	B		2	2	A		6	5	1
	16	10	A		3	1	A		7	4	15
	17	9	A		12	-	A		8	3	4
	18	8	A		12	11	A		9	2	17
	19	7	A		13	10	A		10	-	11
41	-	6	A		14	9	A		10	1	19
	1	5	A		15	8	B		15	6	-
	2	4	A		16	7	A		19	-	B
	3	3	A		17	6	A		19	11	1
	4	2	A		18	5	A	46	-	10	7
	5	1	A		19	4	A		1	9	2
	14	-	A	44	-	3	A		2	8	3
	14	11	A		1	2	A		3	7	1
	15	10	B		2	1	A		4	6	3
	16	9	A		11	-	A		5	5	2
	17	8	A		11	11	A		6	4	15
	18	7	A		12	10	A		7	3	16
	19	6	A		13	9	A		8	2	11
42	-	5	A		14	8	A		9	1	19
	1	4	A		15	7	B		15	5	-
	2	3	A		16	6	A		18	-	A
	3	2	A		17	5	A		18	11	2

£ s. d.			£ s. d.			£ s. d.			£ s. d.		
49	4	3	A	51	18	6	A	54	2	9	A
	5	2	A	19	5	A		3	8	A	8
	6	1	A	52	-	4	A	4	7	A	14
	15	-	B	1	3	A		5	6	A	17
	15	11	A	2	2	A		6	5	A	17
	16	10	A	3	1	A		7	4	A	18
	17	9	A	12	-	A		8	3	A	19
	18	8	A	12	11	A		9	2	A	8
	19	7	A	13	10	A		10	-	D	1
50	-	6	A	14	9	B		10	1	A	2
	1	5	A	15	8	A		19	-	B	3
	2	4	A	16	7	A		19	11	B	4
	3	3	A	17	6	A	55	-	10	B	5
	4	2	A	18	5	A		1	9	B	6
	5	1	A	19	4	A		2	8	B	7
	14	-	A	53	-	3	A	3	7	B	14
	14	11	B	1	2	A		4	6	B	16
	15	10	A	2	1	A		5	5	B	16
	16	9	A	11	-	A		6	4	B	17
	17	8	A	11	11	A		7	3	B	18
	18	7	A	12	10	A		8	2	A	19
	19	6	A	13	9	A		9	1	A	7
51	-	5	A	14	8	B		14	6	B	1
	1	4	A	15	7	A		18	-	A	2
	2	3	A	16	6	A		18	11	A	3
	3	2	A	17	5	A		19	10	A	4
	4	1	A	18	4	A	56	-	9	A	5
	13	-	A	19	3	A		1	8	A	6
	13	11	A	54	-	-	T	2	7	A	14
	14	10	B		2	A		3	6	A	15
	15	9	A		11	A		4	5	A	15
	16	8	A		1	A		5	4	A	16
	17	7	A		1	10	A	6	3	A	17

£	s.	d.									
58	18	8	A	61	12	11	A	63	9	2	A
	19	7	A		13	10	B		10	-	A
59	-	6	A		14	9	A		10	1	A
1	5	A		15	8	A		13	8	B	
2	4	A		16	7	A		19	-	B	
3	3	A		17	6	A		19	11	B	
4	2	A		18	5	A	64		-	10	B
5	1	A		19	4	A		1	9	B	
14	-	B	62	-	3	A		2	8	B	
14	11	A		1	2	A		3	7	B	
15	10	A		2	1	A		4	6	B	
16	9	A		11	-	A		5	5	B	
17	8	A		11	11	A		6	4	B	
18	7	A		12	10	A		7	3	B	
19	6	A		13	9	B		8	2	A	
60	-	5	A	14	8	A		9	1	A	67
1	4	A		15	7	A		13	7	B	
2	3	A		16	6	A		18	-	A	
3	2	A		17	5	A		18	11	A	
4	1	A		18	4	A		19	10	A	
13	-	A		19	3	A	65		-	9	A
13	11	B	63	-	-	T		1	8	A	
14	10	A			2	A		2	7	A	
15	9	A			11	A		3	6	A	
16	8	A		1	1	A		4	5	A	
17	7	A		1	10	A		5	4	A	
18	6	A		2	9	A		6	3	A	
19	5	A		3	8	A		7	2	A	
61	-	4	A	4	7	A		8	1	A	
1	3	A		5	6	A		13	6	B	68
2	2	A		6	5	A		17	-	A	
3	1	A		7	4	A		17	11	A	
12	-	A		8	3	A		18	10	A	

£	s.	d.									
68	4	2	A	70	17	6	A	72	19	11	B
5	1	A		18	5	A	73	-	10	B	
13	3	B		19	4	A		1	9	B	
14	-	A	71	-	3	A		2	8	B	
14	11	A		1	2	A		3	7	B	
15	10	A		2	1	A		4	6	B	
16	9	A		11	-	A		5	5	B	
17	8	A		11	11	A		6	4	B	
18	7	A		12	10	B		7	3	B	
19	6	A		13	9	A		8	2	A	
69	-	5	A	14	8	A		9	1	A	76
1	4	A		15	7	A		12	8	B	
2	3	A		16	6	A		18	-	A	
3	2	A		17	5	A		18	11	A	
4	1	A		18	4	A		19	10	A	
13	-	B		19	3	A	74	-	9	A	
13	11	A	72	-	-	T		1	8	A	
14	10	A			2	A		2	7	A	
15	9	A			11	A		3	6	A	
16	8	A			1	1		4	5	A	
17	7	A			1	10	A	5	4	A	
18	6	A			2	9	A	6	3	A	
19	5	A			3	8	A	7	2	A	
70	-	4	A	4	7	A		8	1	A	77
1	3	A		5	6	A		12	7	B	
2	2	A		6	5	A		17	-	A	
3	1	A		7	4	A		17	11	A	
12	-	A		8	3	A		18	10	A	
12	11	B		9	2	A		19	9	A	
13	10	A		10	-	D	75	-	8	A	
14	9	A		10	1	A		1	7	A	
15	8	A		12	9	A		2	6	A	
16	7	A		19	-	B		3	5	A	

\mathcal{E}	<i>s.</i>	<i>d.</i>														
77	15	10	A	80	1	2	A	82	3	7	B	84	11	7	B	
	16	9	A		2	1	A		4	6	B		16	-	A	
	17	8	A		11	-	A		5	5	B		16	11	A	
	18	7	A		11	11	B		6	4	B		17	10	A	
	19	6	A		12	10	A		7	3	B		18	9	A	
78	-	5	A		13	9	A		8	2	A	85	19	8	A	
	1	4	A		14	8	A		9	1	A		-	7	A	
	2	3	A		15	7	A		11	9	B		1	6	A	
	3	2	A		16	6	A		18	-	A		2	5	A	
	4	1	A		17	5	A		18	11	A		3	4	A	
	12	3	B		18	4	A		19	10	A		4	3	A	
	13	-	A		19	3	A	83	-	9	A		5	2	A	
	13	11	A	81	-	-	T		1	8	A		6	1	A	
	14	10	A			2	A		2	7	A		11	6	B	
	15	9	A			11	A		3	6	A		15	-	A	
	16	8	A			1	1	A	4	5	A		15	11	A	
	17	7	A			1	10	A	5	4	A		16	10	A	
	18	6	A			2	9	A	6	3	A		17	9	A	
	19	5	A			3	8	A	7	2	A		18	8	A	
79	-	4	A			4	7	A	8	1	A	86	19	7	A	
	1	3	A			5	6	A	11	8	B		-	6	A	
	2	2	A			6	5	A	17	-	A		1	5	A	
	3	1	A			7	4	A	17	11	A		2	4	A	
	12	-	B			8	3	A	18	10	A		3	3	A	
	12	11	A			9	2	A	19	9	A		4	2	A	
	13	10	A			10	-	D	84	-	8	A		5	1	A
	14	9	A			10	1	A		1	7	A		11	5	B
	15	8	A			11	10	B		2	6	A		14	-	A
	16	7	A			19	-	B		3	5	A		14	11	A
	17	6	A			19	11	B		4	4	A		15	10	A
	18	5	A	82	-	10	B		5	3	A		16	9	A	
	19	4	A			1	9	B		6	2	A		17	8	A
80	-	3	A			2	8	B		7	1	A		18	7	A

Errors arising from

	£	s.	d.		£	s.	d.		£	s.	d.	
86	19	6	A	89	11	11	A	91	6	4	B	93
87	-	5	A		12	10	A		7	3	B	17
	1	4	A		13	9	A		8	2	A	10
	2	3	A		14	8	A		9	1	A	
	3	2	A		15	7	A		10	10	B	
	4	1	A		16	6	A		18	-	A	
	11	4	B		17	5	A		18	11	A	
	13	-	A		18	4	A		19	10	A	
	13	11	A		19	3	A	92	-	9	A	
	14	10	A	90	-	-	T		1	8	A	
	15	9	A		2	A			2	7	A	10
	16	8	A		11	A			3	6	A	7
	17	7	A		1	1	A		4	5	A	B
	18	6	A		1	10	A		5	4	A	15
	19	5	A		2	9	A		6	3	A	11
88	-	4	A		3	8	A		7	2	A	16
	1	3	A		4	7	A		8	1	A	10
	2	2	A		5	6	A		10	9	B	
	3	1	A		6	5	A		17	-	A	95
	11	3	B		7	4	A		17	11	A	
	12	-	A		8	3	A		18	10	A	
	12	11	A		9	2	A		19	9	A	
	13	10	A		10	-	D	93	-	8	A	
	14	9	A		10	1	A		1	7	A	
	15	8	A		10	11	B		2	6	A	
	16	7	A		19	-	B		3	5	A	
	17	6	A		19	11	B		4	4	A	
	18	5	A	91	-	10	B		5	3	A	
	19	4	A		1	9	B		6	2	A	
89	-	3	A		2	8	B		7	1	A	
	1	2	A		3	7	B		10	8	B	
	2	1	A		4	6	B		16	-	A	96
	11	-	B		5	5	B		16	11	A	
										1	4	A

\mathfrak{L}	<i>s.</i>	<i>d.</i>	\mathfrak{L}	<i>s.</i>	<i>d.</i>	\mathfrak{L}	<i>s.</i>	<i>d.</i>	\mathfrak{L}	<i>s.</i>	<i>d.</i>
96	2	3 _A	97	2	2 _A	98	2	1 _A	99	-	11 _A
	3	2 _A		3	1 _A		10	3 _B		1	10 _A
	4	1 _A		10	4 _B		11	- _A		2	9 _A
	10	5 _B		12	- _A		11	11 _A		3	8 _A
	13	- _A		12	11 _A		12	10 _A		4	7 _A
	13	11 _A		13	10 _A		13	9 _A		5	6 _A
	14	10 _A		14	9 _A		14	8 _A		6	5 _A
	15	9 _A		15	8 _A		15	7 _A		7	4 _A
	16	8 _A		16	7 _A		16	6 _A		8	3 _A
	17	7 _A		17	6 _A		17	5 _A		9	2 _A
	18	6 _A		18	5 _A		18	4 _A		10	- _D
	19	5 _A		19	4 _A		19	3 _A		10	1 _A
97	-	4 _A	98	-	3 _A	99	-	- _T	19	- _B	
	1	3 _A		1	2 _A			2 _A	19	11 _B	

For Errors above £100.

When the error is more than £100, the Tables will readily determine whether it is a reversion or otherwise by the following test.

Suppose the error to be £465:17:7. By cutting off the 4 in the hundreds, and adding that figure to the units, the amount will be £69:17:7, which sum is in the Tables, and consequently determines the *original* sum to be a reversion. But if the amount thus produced was not found in the Tables, then it would have been equally certain that the original sum could *not* be a reversion:

Example: £4,65 17 7

$$\begin{array}{r} 4 \\ \hline 69 \ 17 \ 7 \end{array}$$

In order to ascertain the figures producing the error, it must be worked according to the Rule to which the figures belong that are found in the Tables, of course working with the original amount.

Should the amount exceed £100 after reducing it in this way, then *again* cut off the hundred, and add the figure to the unit as before. For example:

$$\begin{array}{r}
 \text{Error } \text{£7,98 4 1} \\
 7 \\
 \hline
 1,05 4 1 \\
 1 \\
 \hline
 6 4 1
 \end{array}$$

which determines the error to be a reversion by reference to the table for £6:4:1.

Again, for an error of

$$\begin{array}{r}
 \text{£114,15 18 9} \\
 114 \\
 \hline
 1,29 18 9 \\
 1 \\
 \hline
 30 18 9 \{ \text{ amount for} \\
 \text{reference.} \\
 \hline
 \end{array}$$

Rule A.

This Rule applies to all amounts in the Tables having the letter A against them.

These errors are Reversions; and to ascertain the figures producing them, put down

the figures of the error, deduct the pence from 12; place the product over the shillings and under the pence; you carry one, which add to the shillings and deduct from the figure over them, placing the product *over* the units of the pounds, and under the shillings; continue deducting the figures of the error from the figures you place over them till you can go no further. For example, suppose the error £465:17:7. Having proved that this sum is a reversion by the preceding test, put down the figures £465:17:7, and proceed by deducting 7 from 12 pence; place the product over the 17s. and under the 7*d.*; carry one, which added to the shillings makes 18;—18 from 25*s.* = 7; place the 7 over the units of the pounds and under the shillings; carry 1, which added to the units of the pounds and deducted from the figure over, gives 1; place 1 over the tens and under the units, you have then to deduct 6 from 11, giving 5, which place over the hundreds and under the tens; the figures will then stand thus:

$$\begin{array}{r}
 \text{£}517 \quad 5 \\
 465 \quad 17 \quad 7 \\
 \hline
 51 \quad 7 \quad 5
 \end{array}$$

showing that the error of £465:17:7 arises from the figures £517:5 having been entered £51:7:5, because one deducted from the other gives that amount.

Of course the sum to be looked for must depend upon whether the difference is over or short. If the error has no pence, commence by deducting the shillings from 20, and proceed as above. Example, error £105:13.

£117
105 13
11 7

When the error is less than £1, the reversed figures may require to be tried thus:—error, 13s. 7d. 7 from 12 pence=5; put 5 over the shillings and under the pence; carry 1,=14 from 25=11; put 1 over the shillings, making 15s., and under the shillings making 1s. 5d.

s.	d.
15	
13 7	
1	5

Rule B.

Reversions of two different sets of figures producing the same Error.

When an error of this class occurs, the reversion in one case will be found by the Rule A, and in the other by deducting the pence from 12, placing the product *over the units of the pounds*, and under the pence, proceeding as in the first rule. Thus, suppose the error is £142:15:8, worked by Rule A it will stand thus:

$$\begin{array}{r} \text{£158} \quad 4 \\ 142 \quad 15 \quad 8 \\ \quad 15 \quad 8 \quad 4 \end{array}$$

and by Rule B: £144

$$\begin{array}{r} \text{142} \quad 15 \quad 8 \\ \quad 1 \quad 4 \quad 4 \end{array}$$

N.B. There are some amounts in the Tables marked B that can be worked with this Rule only.

Another double reversion may occur in this way. Suppose the error is £136:6:4; Rule A will show the figures reversed to be £151:8 = £15:1:8; but the figures £151:18 = £15:11:8 will produce the same error. These reversions may be always known by the figures in the larger amount having 1

for the unit, and the shillings under 10; so that it will be only necessary to add 10s. to the reversed figures in order to discover both reversions.

Rule C.

The Errors marked for this rule require a slight alteration in the method of working.

Suppose the error to be £406:15:5. 5 from 12 pence = 7; place 7 over the shillings and under the pence; carry 1; 16 from 27 shillings = 11; place 11 over the tens and units, and under the shillings; carry 1; 7 from 11 = 4; place 4 over the hundreds and under the units, the figures will then stand thus :

£411 7
406 15 5
4 11 7

In this class the *error* will always be either 0 or 1 in the tens of the pounds; but only those marked C require this Rule.

N.B. Some of these errors may require Rule A for a double reversion.

Rule D.

Reversions of nine sets of figures producing the same Error.

These errors have all an even 10s. in them, as £27:10, £117:10, £144:10, etc. To ascertain the figures reversed, divide the pounds *only* by 9, (*which must have no remainder;*) to the product, place the figure 1 on the right of the pounds, and the figures 1 to 9 in the shillings. For example, take the error £117:10; 117 divided by 9 gives 13, the figure 1 on the right makes it 131, and 1 in the shillings makes £131:1. It will be seen at a glance that such an amount may be entered £13:11, which deducted from £131:1 gives the amount of the error £117:10. But £131:2 as £13:12 makes the same error, and so on through the whole 9 figures.

The error of 10s. may be caused by £1:1 being entered 11s., £1:2 = 12s., and so on to £1:9.

TRANSPOSITIONS.

As errors produced in this way (viz., by shifting from left to right, and *vice versa*) are comparatively few in number, the actual figures producing each error will be found under their respective amounts.

There are some errors of the same amount that may be caused both by reversions and transpositions, as will be seen below.

Transpositions of Shillings and Pence.

Error 11d.				1s. 10d.				2s. 9d.			
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
1	0 = 0	1	2	0 = 0	2	3	0 = 0	3			
2	1 = 1	2	3	1 = 1	3	4	1 = 1	4			
3	2 = 2	3	4	2 = 2	4	5	2 = 2	5			
4	3 = 3	4	5	3 = 3	5	6	3 = 3	6			
5	4 = 4	5	6	4 = 4	6	7	4 = 4	7			
6	5 = 5	6	7	5 = 5	7	8	5 = 5	8			
7	6 = 6	7	8	6 = 6	8	9	6 = 6	9			
8	7 = 7	8	9	7 = 7	9	10	7 = 7	10			
9	8 = 8	9	10	8 = 8	10	11	8 = 8	11			
10	9 = 9	10	11	9 = 9	11						
11	10 = 10	11									

30 *Transpositions of Shillings and Pence.*

Error 3s. 8d.				4s. 7d.				5s. 6d.			
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
4	0 = 0	4	5	0 = 0	5	6	0 = 0	6			
5	1 = 1	5	6	1 = 1	6	7	1 = 1	7			
6	2 = 2	6	7	2 = 2	7	8	2 = 2	8			
7	3 = 3	7	8	3 = 3	8	9	3 = 3	9			
8	4 = 4	8	9	4 = 4	9	10	4 = 4	10			
9	5 = 5	9	10	5 = 5	10	11	5 = 5	11			
10	6 = 6	10	11	6 = 6	11						
11	7 = 7	11									

Error 6s. 5d.				7s. 4d.				8s. 3d.			
s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
7	0 = 0	7	8	0 = 0	8	9	0 = 0	9			
8	1 = 1	8	9	1 = 1	9	10	1 = 1	10			
9	2 = 2	9	10	2 = 2	10	11	2 = 2	11			
10	3 = 3	10	11	3 = 3	11						
11	4 = 4	11									

Error 9s. 2d.				10s. 1d.			
s.	d.	s.	d.	s.	d.	s.	d.
10	0 = 0	10	11	0 = 0	11		
11	1 = 1	11					

Transpositions of Pounds and Shillings.

As in the preceding case, the errors are placed over the figures producing them; nevertheless the addition of the figure 1 to the shillings or to the pounds and shillings will make the error the same. For example:

£8 6 = £6 8 Error £1 18

£8 16 = £6 18 , £1 18

£18 16 = £16 18 , £1 18

It will be observed that the figures in the units of pounds and shillings do not alter.

Error 19s.		£1:18		£2:17	
£	s.	£	s.	£	s.
1	0 = 0	1	2	0 = 0	2
2	1 = 1	2	3	1 = 1	3
3	2 = 2	3	4	2 = 2	4
4	3 = 3	4	5	3 = 3	5
5	4 = 4	5	6	4 = 4	6
6	5 = 5	6	7	5 = 5	7
7	6 = 6	7	8	6 = 6	8
8	7 = 7	8	9	7 = 7	9
9	8 = 8	9	10	8 = 8	10
10	9 = 9	10	11	9 = 9	11
				12	9 = 9
					12

32 *Transpositions of Pounds and Shillings.*

Error £3:16				£4:15				£5:14			
£	s.	£	s.	£	s.	£	s.	£	s.	£	s.
4	0 = 0	4	5	0 = 0	5	6	0 = 0	6			
5	1 = 1	5	6	1 = 1	6	7	1 = 1	7			
6	2 = 2	6	7	2 = 2	7	8	2 = 2	8			
7	3 = 3	7	8	3 = 3	8	9	3 = 3	9			
8	4 = 4	8	9	4 = 4	9	10	4 = 4	10			
9	5 = 5	9	10	5 = 5	10	11	5 = 5	11			
10	6 = 6	10	11	6 = 6	11	12	6 = 6	12			
11	7 = 7	11	12	7 = 7	12	13	7 = 7	13			
12	8 = 8	12	13	8 = 8	13	14	8 = 8	14			
13	9 = 9	13	14	9 = 9	14	15	9 = 9	15			

Error £6:13				£7:12				£8:11			
£	s.	£	s.	£	s.	£	s.	£	s.	£	s.
7	0 = 0	7	8	0 = 0	8	9	0 = 0	9			
8	1 = 1	8	9	1 = 1	9	10	1 = 1	10			
9	2 = 2	9	10	2 = 2	10	11	2 = 2	11			
10	3 = 3	10	11	3 = 3	11	12	3 = 3	12			
11	4 = 4	11	12	4 = 4	12	13	4 = 4	13			
12	5 = 5	12	13	5 = 5	13	14	5 = 5	14			
13	6 = 6	13	14	6 = 6	14	15	6 = 6	15			
14	7 = 7	14	15	7 = 7	15	16	7 = 7	16			
15	8 = 8	15	16	8 = 8	16	17	8 = 8	17			
16	9 = 9	16	17	9 = 9	17	18	9 = 9	18			

Error £9:10

£	s.	£	s.	£	s.	£	s.	£	s.
10	0	=	0	10		11	0	=	0
11	1	=	1	11		12	1	=	1
12	2	=	2	12		13	2	=	2
13	3	=	3	13		14	3	=	3
14	4	=	4	14		15	4	=	4
15	5	=	5	15		16	5	=	5
16	6	=	6	16		17	6	=	6
17	7	=	7	17		18	7	=	7
18	8	=	8	18		19	8	=	8
19	9	=	9	19					

£10:9

£	s.	£	s.	£	s.	£	s.	£	s.
11	0	=	0	11		12	0	=	0
12	1	=	1	12		13	1	=	1
13	2	=	2	13		14	2	=	2
14	3	=	3	14		15	3	=	3
15	4	=	4	15		16	4	=	4
16	5	=	5	16		17	5	=	5
17	6	=	6	17		18	6	=	6
18	7	=	7	18		19	7	=	7
19	8	=	8	19					

£11:8

£	s.	£	s.	£	s.	£	s.
12	0	=	0	12			
13	1	=	1	13			
14	2	=	2	14			
15	3	=	3	15			
16	4	=	4	16			
17	5	=	5	17			
18	6	=	6	18			
19	7	=	7	19			

Error £12:7

£	s.	£	s.	£	s.	£	s.	£	s.
13	0	=	0	13		14	0	=	0
14	1	=	1	14		15	1	=	1
15	2	=	2	15		16	2	=	2
16	3	=	3	16		17	3	=	3
17	4	=	4	17		18	4	=	4
18	5	=	5	18		19	5	=	5
19	6	=	6	19					

£13:6

£	s.	£	s.	£	s.	£	s.	£	s.
14	0	=	0	14		15	0	=	0
15	1	=	1	15		16	1	=	1
16	2	=	2	16		17	2	=	2
17	3	=	3	17		18	3	=	3
18	4	=	4	18		19	4	=	4
19	5	=	5	19					

£14:5

£	s.	£	s.	£	s.	£	s.	£	s.
13	0	=	0	13		14	0	=	0
14	1	=	1	14		15	1	=	1
15	2	=	2	15		16	2	=	2
16	3	=	3	16		17	3	=	3
17	4	=	4	17		18	4	=	4
18	5	=	5	18		19	5	=	5
19	6	=	6	19					

£15:4

£	s.	£	s.	£	s.	£	s.	£	s.
14	0	=	0	14		15	0	=	0
15	1	=	1	15		16	1	=	1
16	2	=	2	16		17	2	=	2
17	3	=	3	17		18	3	=	3
18	4	=	4	18		19	4	=	4
19	5	=	5	19					

£16:3

£	s.	£	s.	£	s.	£	s.	£	s.
15	0	=	0	15		16	0	=	0
16	1	=	1	16		17	1	=	1
17	2	=	2	17		18	2	=	2
18	3	=	3	18		19	3	=	3
19	4	=	4	19					

£17:2

£18:1

£	s.	£	s.
19	0	=	0

Transpositions of Pounds only.

The following Errors will apply to transpositions of units with tens, tens with hundreds, hundreds with thousands, etc.

Error 9	18	27	36
10 = 01	20 = 02	30 = 03	40 = 04
21 = 12	31 = 13	41 = 14	51 = 15
32 = 23	42 = 24	52 = 25	62 = 26
43 = 34	53 = 35	63 = 36	73 = 37
54 = 45	64 = 46	74 = 47	84 = 48
65 = 56	75 = 57	85 = 58	95 = 59
76 = 67	86 = 68	96 = 69	
87 = 78	97 = 79		
98 = 89			

45	54	63	72
50 = 05	60 = 06	70 = 07	80 = 08
61 = 16	71 = 17	81 = 18	91 = 19
72 = 27	82 = 28	92 = 29	
83 = 38	93 = 39		
94 = 49			

81
90 = 09

In all transpositions of three figures, between the first and third figure, the dif-

ference will be either 99, 198, 297, 396, 495, 594, 693, 792, or 891. The figures transposed will correspond in the *unit* and *hundred* with those of the unit and ten in the preceding table. For example, in the error 792, the hundred and unit making 72, the figures transposed must be either 8..0, or 9..1. It is no matter what the *middle* figure may be, the transposition between the *first* and the *third* must be one of those in the table.

Errors arising from Bad Figures.

To those who have had any experience in looking for Errors, the following table may be of little or no service; nevertheless this book may fall into the hands of some not so well acquainted with the probabilities attending this class of Errors, to whom a reference might be useful.

A frequent source of error is that occasioned by carelessly written figures. In the following table is shown the only figures that can produce each error (*i.e.* if there is not more than one error) applying to pounds, shillings, and pence.

Error	*1	2	*3	4	5	*6	7	8	*9	10	*11
1 {	—	1	2	3	4	5	6	7	8	9	10
2 {	—	3	*4	*5	*6	7	*8	*9	10	11	
3 {	—	1	2	3	4	5	6	7	8	9	
4 {	—	5	6	7	8	**9	10	11			
5 {	—	1	2	3	4	5	6	7			
6 {	—	1	2	3	4	5					
7 {	—	1	2	3	4						
8 {	—	1	2	3							
9 {	—	1	2								
10 {	—	1									
11 {	—										

The figures marked (*) denote the most probable ones for the error to occur in. ** A French 5.

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